

PATENT
TS1320 (US)
LPM:CWS:EM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of)
JOLINDE MACHTELD VAN DE GRAAF and)
THIJME LAST)
Serial No. 10/533,172) Group Art Unit: 1797
Filed April 29, 2005) Examiner: Frank M. Lawrence Jr.
REMOVAL OF SULPHUR COMPOUNDS FROM) April 9, 2008
HYDROCARBON STREAMS USING)
ADSORBENTS AND REGENERATION)
OF THE LOADED ADSORBENTS)

COMMISSIONER FOR PATENTS
P. O. Box 1450
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Sir:

RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF

In order to correct the deficiency noted in the Notice of Non-Compliant Appeal Brief mailed March 25, 2008, please replace the section of the brief entitled “Summary of claimed subject matter” with the following replacement section:

Summary of claimed subject matter

The subject matter claimed in independent claim 1 is a process for removing water from a hydrocarbon stream comprising water and certain specified sulfur compounds by adsorbing the water on a first zeolite having a pore diameter of less than 5 Å, and thereafter contacting the hydrocarbon stream with a second zeolite having a pore diameter of at least 5 Å to adsorb sulfur compounds thereon to provide a sulfur loaded adsorbent, followed by regeneration of the sulfur loaded adsorbent with a regeneration gas stream comprising an inert gas having a relative humidity of at the most 30 %. Support for the limitations in claim 1 can be found in the specification on page 3, line 25 to page 4, line 4; page 5, lines 19-29; page 6, lines 21-29; page 9, lines 15-23; page 10, lines 9-29; and page 11, lines 22-32.

The subject matter claimed in independent claim 7 is a process for the regeneration of an adsorbent involving the use of one or more vessels having a first adsorbent bed comprising a first zeolite having a pore diameter of 5 Å or less and a second adsorbent bed comprising a second zeolite having a pore diameter of more than 5 Å; using the vessels in the removal of sulfur from a hydrocarbon stream to provide a second zeolite loaded with sulfur; and regenerating the sulfur loaded second zeolite with a regeneration gas stream having a relative humidity of less than 100 %. Support for the limitations in claim 7 can be found in the specification on page 3 to page 4 line 2; page 5, lines 19-22; page 9, lines 15-23; and page 10, lines 9-29.

The subject matter claimed in independent claim 14 is a process for the removal of sulfur compounds from a hydrocarbon stream containing certain specified sulfur compounds which involves treating the hydrocarbon stream to remove water followed by contacting the hydrocarbon stream with an adsorbent having a pore diameter of at least 5 Å to adsorb the sulfur compound(s) thereon, and contacting the sulfur loaded adsorbent with an regeneration gas stream comprising an inert gas having a relative humidity of at the most 30 %. Support for the limitations in claim 14 can be found in the specification on page 3, line 25 to page 4, line 2; page 5, lines 19-29; page 6, lines 21-29; page 9, lines 15-23; and page 11, lines 22-32.

The subject matter claimed in independent claim 20 is a process for the regeneration of an adsorbent which is loaded with a sulfur compound by contacting the adsorbent with a regeneration gas stream having a relative water humidity of at least 0.1% and less than 100%, wherein the adsorbent is contained in two beds, one bed comprising a first zeolite having a pore diameter of up to 5 Å and a second bed comprising a zeolite having a pore diameter of more than 5 Å. Support for the limitations in independent claim 20 can be found in the specification on page 3, line 25 to page 4, line 2; page 5, lines 19-29; page 6, lines 21-29; page 9, lines 15-23; page 10, lines 9-29; and page 11, lines 22-32.

Respectfully submitted,

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